THE

HORTICULTURAL REGISTER,

AND

GARDENER'S MAGAZINE.

NOVEMBER 1, 1837.

ART. I.—*On Transplanting Ornamental Trees, in Towns and Cities.* Communicated for the Horticultural Register, by EDWARD SAYERS.

THERE are but few subjects of a more engaging and useful nature in the environs, and indeed in the interiors of Towns and Cities (where a proper space can be admitted) than the presence of ornamental trees that at once give a pleasing variety to the scene, and add to the comforts of the citizen by their cooling shade in the summer season. But, although this branch of arboriculture is so much cherished, in almost every part of the Union; by general observation it will be seen, that, many failures happen in planting; and that, many trees are altogether misplaced, owing *to a mere want of consideration*, at the time of planting and a trifling additional expense.

The first consideration in this, and indeed in all other description of ornamental planting, is, in the selecting of the proper kinds of trees adapted to the purpose, that will thrive and have a healthy appearance in the situation they are planted in. The best and surest method to this method of planting, is, to select such trees as are of an ornamental character and thrive well in the neighborhood of the town or city they are to be planted in: the choice of the kinds should be made from trees fully grown, from which the true *characteristic* and *habit* can be seen. There are many kinds of trees well adapted for this purpose in the different

sections of this country and although, perhaps the very kinds that are the most adapted and ornamental in one Town are not so in another. This depends on climate and location. The *Alianthus glandulosa* or Tree of Heaven and the *catalpha syringifolia* answer admirably well as ornamental trees in New York city; their habit being well adapted and hardy enough to withstand the climate; but in Boston, Albany and the colder places, the winter's severity acts on their system and injures them materially; on the other hand, the Maple, the Lime, the Horse-chestnut and Elm thrive well in New York and almost every city they are planted in.

The kinds of trees being decided upon, the next thing is the selecting them for planting which in all cases I should recommend to be taken from Nurseries, although in many cases, trees do well taken from woods, it cannot be recommended as a general mode to be followed in planting. Trees taken from woods rarely possess the proper qualities for this kind of planting; in woods, trees generally grow thickly together, consequently their bark is thin, the roots large, with few fibres and their tops slim and weakly; these consequences arise from their being excluded from a free access to the sun and air; which so much improve the habit and constitution of trees for transplanting purposes. In the act of planting trees of this kind they are generally divested of their roots and tops, *the very organs that draw food and nourishment to the tree*, therefore, without very favorable circumstances it must eventually die; on the other hand trees grown in a nursery are mostly well rooted and have fine healthy, well formed tops and other requisite properties for removal.

Having selected and procured the trees, the next thing is the planting, which is often done by digging out a few shovels full of gravel and placing a tree in a hole not sufficient to receive the roots of it. In this situation a tree being deprived of most of its roots and branches, makes a feeble effort of growth in the Spring; but, so soon as the dry season commences, it presents to the planter dead leaves and a lifeless *pole*. The proper manner to plant a tree in such places is, to take out a large hole say two cartloads of gravel and like, which is to be filled in with the same quantity of good loam with a portion of well rotted manure incorporated therewith. The tree is then to be carefully planted therein, observing well, to spread the roots in their natural position and tread the earth care-

fully about them, which if very dry pour into it a pail or two of water to make it adhere more closely to them.

The trees being planted they should immediately be protected by boxes, stakes or otherwise in order to guard off cattle or other things that are liable to come into contact and move them from their position, which will deter them from taking root and growing freely in the Spring.

When the trees begin to grow in the Spring apply a pail or two of water to each every two or three days through the months of May and June, when they will be well established and need no other care than being well protected and occasionally pruned.

The best time for planting trees on dry bottoms is at the fall of the leaf; in most low situations early in the Spring.

Art. II.—*Tendency of Soils to Deteriorate.*

The natural, the inevitable tendency of all cultivation of the soil, is deterioration. The richest and most fertile, contain but a certain proportion fit for the purposes of vegetation; and every crop taken from the soil, sensibly lessens this quantity. The result therefore must be, that continual cropping will reduce the best soils to barrenness, until, where circumstances admit, nature by her gradual method of repairing wrongs, imparts a degree of fertility. It is however possible to counteract this tendency to sterility in soils; to prevent the exhaustion of the qualities necessary to support vegetable life; and the difference between good and bad farming, or proper and improper cultivation, may be determined mainly by a reference to this single result.

In this country we can hardly form a correct idea from anything around us, of the frightful barrenness to which fertile soils may be reduced by improper management. Cultivation is here so young, that had it been of the worst description it would hardly have been possible to have exhausted so soon the treasures that had for centuries been accumulating in our soils. Still there are examples in the United States, where soils have nearly reached that point from which a restoration to fertility is impracticable. Soils of a silicious nature, or that are inclining to sand, are the most easily and quick-

ly reduced. Of this, the southeast part of Massachusetts, and parts of the southern States at the present time, and parts of Long Island as it was some thirty years ago, furnish striking proof. When cultivated without regard to consequences, the nutritive part of such soils is quickly exhausted; the little vegetation produced is not sufficient to prevent the burning effect of the sun: the roots of the grasses are unable to fix and bind the soil; it becomes loose and floating; plants root themselves with more and more difficulty, and at last what was once a fertile plain becomes a sandy waste, where cultivation is impossible.

It is in the old world that this process of deterioration may be the most clearly traced. To renovate, seems to have formed no part of the ancient profession of agriculture. In all the writings of antiquity there is scarcely a hint that manuring, or in any way improving cultivated lands, was practised to any extent. Now and then, where nature had set the example of imparting fertility by the annual overflow of rivers, man seemed inclined so far to imitate her works, and irrigation for ameliorating land was frequently adopted. But this was about the extent of ancient attempts at improved cultivation, and the result has been such as might confidently have been predicted. The regions of the east that two or three thousand years since were as the garden of Eden for beauty and fertility, have gradually become sterile and worthless; and tracts of country that once supported a thriving and industrious population, have from the action of the causes alluded to above, become deserts, in which the solitary camel can scarce find a shadow of vegetation to supply his easily satisfied wants. Mesopotamia; parts of Syria and Palestine; Edom, and parts of Arabia Felix; many parts of the north of Africa; and no inconsiderable portion of Asia Minor, have thus become hopelessly barren. The finest of wheat can now no longer be grown, on the plains where once the reaper filled his arms with the yellow sheaves. They were ceaselessly cropped, until the soil was so exhausted, that the unaided efforts of nature were unable to restore fertility, and the result is perpetual barrenness.

To counteract this tendency to sterility, is the business of the farmer; and on the possibility of doing this, rests the whole system of improved agriculture. Science has here come to the aid of the cultivator of the soil, and by revealing the agents and promoters of

fertility has greatly assisted and simplified the processes without which all would be still doubtful and uncertain. The action of manures has been ascertained; the value and activity of the various salts formed by the decomposition of animal and vegetable matter in part determined; the aid which the mineral earths afford vegetation has been carefully examined; and those combinations of soil the best calculated to induce fertility been accurately investigated. It has been shown that to take from the soil, without making correspoding returns, is suicidal policy; and that if this point is properly attended to, land can be cropped without danger of deterioration.

Manure then, is the sheet anchor of the farmer. It is to this source of fertility he must look for the renovation of the soil, and the means of continued productiveness. And it is to manures produced from his fields, from his herds and his flocks, from decayed vegetable and animal matter, that he must look for this result. These are the true fertilizing ingredients; and though other agents may be useful as exciting these to action, yet these may be considered as constituting the food of plants, the cause of growth and nutrition. The application of the exciting mineral manures, such as lime and gypsum, is productive of the happiest effects, for the reason assigned above; yet they are not so absolutely essential to the improvement of the soil as those that have a vegetable or animal origin. Matter which has once lived, which has already taken the forms of organized existence, more readily assumes the forms of organized life, and is more easily assimilated, than that which has never undergone such a change. It is the office of the vegetable to take the crude atoms of matter as they exist in the soil, and prepare them for the support of animal life; and when this has once been done, though a partial decomposition may have been effected, a renewal of the process is comparatively easy and certain.

In connection with the preparation and application of manures, the next most important step which modern agriculture has taken to prevent a deterioration of the soil, is rotation in crops. Judiciously conducted, the result is certain; exhausted lands are restored, and the profits of the agriculturist greatly increased. It was formerly the custom to let lands suitable for grass remain for that purpose alone; while those suitable for the plough were annually subjected to its use until exhaustion forbid. It was then left

to the restoring processes of nature. There were at the beginning of this century, lands in the farming sections of England which it was well known had lain in grass for five hundred years, and there were other tracts which had been as constantly submitted to the plough, or at least as often as the soil promised to repay the expense of cultivation. This system has been abandoned; a more enlightened system of agriculture has prevailed; and the products in consequence have been more than doubled. The course of rotation is indeed variable in different districts, both in Europe and in this country, but it is founded on the same great principle, that different plants take up different ingredients from the same soil, and from different depths, and that a new plant will flourish in a soil where one of the same kind previously cultivated could not succeed at all. Thus in England, in Holland and Belgium, in some parts of Germany and France, and in some few instances in this country, a regular course of cropping adapted to the soil, has been adopted with the happiest effect. This course which varies from three to six years, according to circumstances, embraces roots, grains and grasses, and taken in connection with thorough manuring, which this system enables the farmer to practise, not only improves the quantity and value of each kind of crop, but is deepening, enriching and fertilizing the soil. Manure, and the rotation of crops, are then the great means to which we must look to preserve our now fertile plains from the fate which has overtaken so large a part of the east; and they are fortunately both easy of application, and entirely within our reach.—*Genesee Farmer.*

Art. III.—*Rural Scenery.* Communicated for the Horticultural Register, by Edward Sayers.

ON THE MORE GENERAL INTRODUCING OF NATIVE PLANTS INTO ORNAMENTAL PLANTATIONS AND FLOWER GARDENS.

It is much to be regretted, that in a country possessing so many fine varieties of *native* shrubs and herbaceous flowering plants, as are to be found in the different parts of the Union, they are not more generally introduced into the ornamental and flower garden departments.

It is not my province in this place to point out any reasonable supposition why the preference of planting of exotic plants of less beauty and unpossessing the hardy and requisite qualities with which nature has endowed those indigenous to this country, nor to deter in any way the interest taken in endeavoring to acclimate and naturalize any foreign production hitherto or to be in future introduced ; for I am well aware that such introductions are *the very nerve of horticultural enterprise*, and connect as it were a friendly and really useful feeling between persons of the first character in the different parts of the known world. But after giving way to such feelings it naturally becomes the interest to investigate the natural productions of the country in which is considered our native home and under this impression I shall proceed on my subject of introducing more generally native plants in ornamental plantations.

The most ornamental and the least attended to native forest tree is, the Liriodendron tulipa or the tulip tree, (generally known as white wood.) The tree is a native of New York state and will withstand the winters in almost any part when well established. The tree when grown separately forms a fine conical shape and when in full foliage presents a richly clad green. The leaves are of a singular appearance, being precisely in shape of a saddle, and hence the name of (saddle tree.) The timber of the tree is used in many ways for light purposes, as shelves of houses, window and coach blinds, and the like purposes and is extremely easily worked with edge tools. To this may be added a long list of the different varieties of maples, elms, oaks, chestnuts and the like as deciduous trees ; and the various kinds of firs, arbor vitea, cedar and the like as evergreens too well known to require any comment under this head.

The most exquisite native shrub is the Magnolia glauca, a native of the swamps of New Jersey, which when in blossom its fragrance is breathed for some distance around. It seems to be a beautiful economy in nature to place so beautiful a plant of so exquisite flavor in a situation when at the time of its flowering the effluvia arising from the swamps in which it grows is of a disagreeable nature even to the passer by. The Magnolia appears to be altogether local to such places, and consequently thrives best in moist shaded places, and is particularly adapted (where it seldom finds a place) to the concealing unsightly places in close confined yards, side en-

trances and the like; where if generally grown it would in a measure counteract the unpleasant effluvia arising from such places by its fragrance when in flower. To this may be added a numerous class of hardy flowering shrubs, as the different varieties of Azalias or American honeysuckles. The Kalmias Rhododendrons, Andromedai and many other pretty kinds — the flower garden could also be decorated at almost every part of the flowering season with native flowers, as the Anemone, and vernal flowering plants of the spring, and in the summer and autumn months the many varieties of Asclepias, Lobelias.

The many pretty varieties of ferns may also be introduced to a very good purpose on Rockery, and the different kinds of vines for the purpose of covering trellis arbors and the like places in gardens and ornamental departments.

The principal object to be taken into consideration in this kind of planting is, to take particular notice of the different location and soil the plants naturally grow in; and to endeavor if possible to place them in a similar situation when placed in the ornamental or flower garden department. For the want of thus placing many native plants in their natural sites and locations, many persons have been discouraged from cultivating them. I have particularly noticed this misapplication in the *Magnolia glauca* by persons very desirous to cultivate it and who would be at some expense to arrive at the intended purpose. The plant has been taken from its native swamps and placed perhaps in a flower garden in an open dry situation where its sudden change rendered it almost impossible to survive and flourish to any perfection. Another error often occurs in the culture of native plants by cutting down their stems and leaving them bare in the flower garden in the winter. It must be recollected that nature has given to all plants and placed them in such situations, where they have a partial winter covering of leaves, stalks and the like, and as she should in this and every other case be as much as possible represented, I need not make any remark on the subject in this place.

(To be continued.)

Art. IV.—*On Laying out Gardens and Ornamental Plantations.* By Edward Sayers.

In reference to the many connected branches of horticulture, that of laying out gardens and ornamental plantations may be considered as highly interesting and useful to the possessor and the general observer: for it not only requires a certain knowledge of arranging the ground to be operated upon for the intended purpose, but also a correct estimate of the growth and the different *port* or habit of the several trees, shrubs and flowers to be planted; with a practical knowledge of their several uses and qualities, *relative* to the ornamental or domestic purposes to which they are to be applied; which should be in accordance with the plan and purpose of the proprietor, and meet the *eye* of every critical observer in the design, the arrangement and the distribution of the different trees and plants when completed.

In laying out gardens, the first consideration is the extent of the ground to be laid out; the taste and desire of the proprietor, and the probable sum to be expended on the improvement or making the grounds. Having obtained these prerequisites, a general estimate can then be made to meet the different objects of improvement, in a pretty accurate manner, by calculation; each separate improvement, as the expenses of houses, soil and levelling, trees, labor and the like, being added up in one sum total.

In proceeding on my subject, I shall not pretend to follow any particular mode that has been laid down as a correct theory in Landscape Gardening; but endeavor to hit on some method that appears the most *natural, and combines real meaning with useful purposes*, which I have always considered a grand principle in laying out and planting gardens; for when the thing is not adapted to the intended purpose, a *deficiency* will always be discovered by any intelligent person; as, for instance, to see a nursery laid out into ornamental figures, an impropriety is at once discovered, when it is well known that every thing should be found in almost alphabetical order; on the other hand, too much formality in the ornamental or flower garden is as inconsistent, where every possible variety should be given in the most pleasing and contrasted manner. The

same affinity may be discovered by any intelligent observer in every department relative to horticulture.

In forming the plan of the ornamental plantations or grounds to be laid out, one principal object to be kept in view, is that of an uniform proportion, in the walks, borders and the different appendages; by which I mean that no incongruity may appear to spoil the good effect intended to be represented. For instance, narrow walks on an extensive pleasure ground have a contracted appearance, while very wide walks on a small place are as inconsistent:—*Every thing should have a free, open appearance, that at once attracts the attention of the observer and conveys a real meaning.*

In laying out grounds and ornamental gardens, many pleasing appendages may be very appropriately placed, to give a good effect, and appear to have a real meaning: as rustic arbors, ornamental seats, ornamental water, rockeries, and the like additional appendages, which, when properly placed and managed, give a finish to the grounds, and have the most pleasing effect, but when badly done, their absence is better than their presence; for, in such cases, they have the appearance of a feeble effort to accomplish the intended purpose of the design,—for instance, where a pond is made in such a location, that it is nearly all the summer *dry;* or a *tumble-down* bridge over a canal or stream of water; a rustic arbor exposed to the *burning rays of the sun*, finished in too much mechanical order, are incongruities altogether inconsistent to the purpose. A pond or sheet of water has a beautiful effect in low ground, where the observer at once discovers that a low, unsightly and unhealthy piece of ground has been converted into a useful and ornamental purpose; a well contrived bridge over a stream of water gives the same impression of improvement by a better communication from one part of the ground to the other, and a rustic arbor placed in a cool retreat is always admired by the visitor, after viewing the flower garden and ornamental grounds. It should be so placed that it is approached by a *serpentine*, or other well contrived walk, leading from the flower garden, and if possible a green sward or lawn around it, to give those who rest in it the appearance of retirement.

There is also some *knowledge* and *art* required in the planting of ornamental grounds and gardens, for if the plan or design is in every way the most adapted to the purpose, a mismanagement in the

planting will destroy the good effect intended to be given. *There should be a corresponding harmony in the effect given on the whole premises ornamented or planted, with a boldness mixed with the appearance of lively variety.* To effect this object, the planter must be well acquainted with the port or habit of trees, as relates to their different shades and colors of foliage, their form and height, and whether of a rapid growth or of a tardy progress. Indeed every part of the ground should be in the eye of the planter in a finished state before it is begun or some misapplication will be made.

By a little observation there will be discovered many improprieties in ornamental plantations, owing to a little want of foresight in planting; in some places heavy kinds of evergreens, as the *Arbor vitæ*, have the precedence, or other deciduous trees, &c. which, if judiciously mixed, would have a pleasing effect without so much formality.

(To be continued.)

Art. V.—*Cactus Triangularis.*

Mr Breck—Dear Sir, I am indebted to the politeness of Mr Haggerson, gardener to J. P. Cushing, Esq., of Belmont Place, Watertown, Mass. for the opportunity of communicating to you a description of the *Cactus Triangularis* which I had the pleasure to see in flower, in the pine stove of that place on the evening of the 14th October. It is one of the most splendid varieties of the night-flowering cactus, and is rarely seen in flower out of a tropical climate, of which it is a native: and it is, very probable the first specimen ever flowered in this part of the union.

The flower-bud which was covered with a dark green imbricated calx, measured before its expansion, 18 inches in length, from the joint of the plant to its apex, and the top of the flower-cup when fully expanded measured eight inches in diameter, and the outside or extreme petals above a foot in *diameter.* The flower is similar to the C. *grandiflora*, or night-flowering; but in color it is different, in the petals which are a clear white and have a fine flake-like appearance, which are prettily contrasted by the yellow anthers in the centre that fold around the style which has the appearance of

highly polished white marble: in fragrance is not equal to the grandi flora; although for nobleness it may be said to be its superior; and indeed is one of the finest acquisitions to the stove.

From an account of this flower, given with a plate, in Curtis's Magazine for 1818, it appears to have been considered a very rare flower, as the specimen was sent in bud to the publisher, by a Mr Storrer, of Flower Park, near Henly-upon-Thames. The author says, "The first account we have of one of these plants flowering in Europe, is by Dr. TREW, in the ninth volume of the Actæ Naturæ Curiosorum; where there is an incorrect figure of one which flowered in the garden of the University of Altorf, in the Canton of Uri, in the year 1747; but it had flowered many years before in Germany, and about the same time at Vienna, in the garden of Prince EUGENE. A better figure is given in the tenth volume of the same work. But the best representation of the flower, is by Dr RISLER, from a plant, which had been many years in his father's stove, but at the time of its blossoming was in the possession of Syndic HOFER, of Mulhausen.

"In this country," he continues, "it first flowered at Hampton Court, and at the marquis of ROCKINGHAM'S. In the former place it appears to have been cultivated seventy years before it produced any flowers, being in the collection there in 1690, and not having blossomed in England, according to MILLER, in 1759."

"Perhaps," says the author, "the reason of its having been more shy of flowering here than on the Continent is, that the wetness of our summers have hardly admitted of the plants' being entirely exposed to the open air during the summer months; which Dr RISLER recommends, and so all the flowering plants above mentioned, appear to have been treated."

It is most probable that the situation and treatment given to the plant flowered by Mr Haggerson, was in a great measure the cause of the plant under notice flowering, it being placed in the back shelf of the pine-stove, where it had free access to heat and air; the plant was also much cramped at root, being in a very small pot.

It is much to be hoped that so beautiful a class of plants will be better known than hitherto in culture, and find their way into many collections of plants. E. S.

ART. VI.—*Review of Clement Hoare's Practical Treatise on the Culture of the Grape Vine on open walls.*—First American edition.

The above title is a reprint of a neatly printed work of 134 pages octavo. By Wm. D. Ticknor, Boston: and dedicated to the members of the Horticultural Society of Massachusetts, under the impression that a "perusal of it will indicate the causes of the general failure of our vines, and that a strict adherence to the severe discipline so clearly illustrated by the author, will restore the confidence of the horticulturists of Boston and its vicinity in the capacity of their climate, to mature, in the open air, some of the best varieties of foreign grapes."

IN noticing the treatise under consideration, it will be proper to state that the work was written with *a view to renew the culture of the foreign grape in open culture in the island of Great Britain;* and the whole *tenor* of the writing is adapted to that climate; therefore, the sole object is altogether of a *local nature*, which should be the first impression of the reader, and borne in mind through the management in the different departments of the practical instructions laid down by the author. By close and attentive reading, it will be discovered that even, should the system prove altogether correct in *theory* and *practice*, that much attention will be requisite in the adapting of it to this climate; which, in many cases, is known to be quite different from the one the subject is intended to be practised in; under this impression I shall in my remarks keep in view the subject under the consideration of climate more than culture; for after a careful reading of the *practice* laid down by the author, I am decidedly of opinion with the intelligent horticulturist who has recommended the work,* that "the general principles laid down by the author, although applied to the culture of the vine on open walls, are highly valuable as fundamental rules for the treatment of this plant in all situations, whether in door, or out on open walls, or upon trellises, in town or country."

The *Author* commences the book with an *introduction* of some length, in which he gives the class and order of the grape with its

* Mr Brimmer's letter.

general character and habits, in a very clear manner, relative to its native country, with an historical sketch of the high estimation it has been held in at so early a date as before the Christian era: the vine is then traced in its culture in Great Britain before that period, and it is proved by history that the vine was cultivated to a good effect in that country for a "long series of ages." After regretting the failure of the grape in Great Britain, the author points out a system in which the culture may be renovated to a very profitable purpose under the method about to be spoken off, by which every square foot of wall may be made to bear a pound weight of fine grapes, (p. 17.) and furthermore adds, "with reference to the importance of the culture of the vine, as affording a most valuable and highly esteemed fruit, it deserves especial remark, that for making wine, not only are ripened grapes applicable to that purpose, but from the leaves, tendrils, and young shoots of vines, and also from unripe or immature grapes, very fine wine may be made, differing in no respect from many sorts of wines imported from abroad."

The introduction closes with reference to a chemical examination on the subject, (p. 17.) quoted from "Dr. Macculloch's Remarks on the Art of making Wine;" with a confidence if the principles of the practice laid down are followed, that the vine may be made to bear a produce to fully recompense the cultivator in the most satisfactory manner. Having such inducements pointed out as encouraging to the culture of the grape, the next thing in consideration is, to make ourselves carefully acquainted with the method of culture as relates to the different times of pruning, soil, location, temperature, diseases, and the like, under the consideration of the writer, where the subject is intended to be put in operation, and then note the time and locations in comparison with that of this country, when something like an estimate may be made if the same results may be expected from the same practice, if strictly followed; or whether any amendment or adaptation can be entered into, to grow foreign grapes by out doors culture to good advantage, which can only be proved after a satisfactory trial has been given in the most careful manner.

In proceeding to the culture of the grape, I shall follow the author's ideas regularly through the Treatise, and give some remarks on their probable good or bad effects if followed, at the conclusion.

The second chapter commences with some capital remarks on

the mismanagement of pruning grapes, and the results therefrom. The subject of pruning is practically handled, and the most general errors of mismanagement and failure of crops of grapes assigned to the characteristic of the grape being but little known. "The grand parent error," says the writer, "which prevails universally in the cultivation of the vine on walls, lies in the method of pruning usually adopted, and this is undoubtedly the consequence of the nature of the plant, and its peculiar characteristics being in general little understood. The immense quantity of wood which a vine annually produces, and the force with which its sap flows, causing its most vigorous shoots to be formed at the extremities, render it necessary, in order to keep the plant in good bearing condition, and its branches within reasonable distance of its stem, that the pruning-knife should be used to a far greater extent than is ever practised on any other description of fruit whatever. The most severe manner indeed, in which that instrument is at any time applied to other trees, is as nothing when compared with that required for the vine. Some just remarks are made on exhausting the vital energies of the vine by leaving too much wood, and leaving too much fruit on the vine, especially before its nature is sufficiently robust to mature the fruit without weakening it in such a manner as to retard its future growth: the chapter closes with some excellent remarks on pruning and over-bearing of vines, which are worth the price of the book to any person engaged in, and unacquainted with the culture of the grape.

The third chapter is an excellent comment "On the capability and extent of the fruit-bearing powers of the vine," in which the writer comments on the ill consequences arising from the over-croping of vines. "In very warm summers," says the writer, "the juices of a vine-plant are more highly elaborated than usual, the sap being inspissated or thickened, in a greater degree by the increase of solar heat, in consequence of which, it is rendered more productive of flower-buds than leaf-buds." He then states, "In the following year, almost every vine, however injudiciously managed will be seen loaded with fruit, and the year is then called "a grape year." In consideration that most persons leave all the bunches on such vines, the author very properly condemns the mode as a sure case of exhausting the vine, and causing the fruit to ripen prematurely; the subject is continued by the result of his experiment on

the probable quantity of fruit a vine is capable of bearing when of a certain girth of the main stem; and a table of his experiment is appended, which will be found a useful criterion in all cases of grape-growing.

In the following chapter the aspect best adapted to the grape is pointed out with the advantage of a sheltered situation, as the writer points out that warmth alone is not the only requisite, but that protection from winds is also indispensably necessary, and states that, "There is no period in the growth of the vine," that the wind will not have a greater or less pernicious effect on the well being of the vine, the aspect selected is that of a south-east or due south, which will most probably be found to answer the best location for the grape in this country in any situation or manner of culture.

The next subjects spoken of are the soil, compost, and borders; every kind of manure is recommended that is generally used, as sweepings of streets, blood, bones, horns, the hoofs of cattle, cuttings of leather, woollen rags, feathers, &c. &c. In this part of the Treatise I think the writer is rather diffuse in his notions and likely to bewilder any young beginner into an expensive and useless trouble in collecting so many materials. So far as relates to the use of bones, there is no doubt but they are a fine nutriment (particularly when ground or crushed) to the grape or any other fruit or vegetable; but as regards the different sizes it is altogether a subject of little importance. A border, dug two feet and a half deep, on a moderate dry bottom, filled with a compost from the top sod of a loamy pasture, well incorporated with rotten manure, either of horse, cow, or other animal, will grow grape vines sufficiently strong to produce grapes if the climate will admit, either in doors or out, and if bone dust can be mixed therewith the better. Blood, soapsuds, night-soil, or any such nutriments in a liquid form, mixed and incorporated with compost, will be found to be proper in almost any grape borders. As regards the compost recommended for the border, I am of an opinion that it will not in every degree be found to answer in this climate, for the many dry materials recommended on so shallow a depth for the border, will be the cause of draining it to complete dust in the summer season in this climate, at a time when the vines will require the most support from the earth into which they are grown.

AMATEUR.

(To be continued.)

Art. VII.—*Plants Recently Figured and Described in Foreign Works.*

Rhododendron phœniceum; var. splendens. (*Splendid Rose-bay.*) Linnean Class and Order, Decandria Monogynia. Natural. Order. Ericaceæ. Trib. 2. Rhodoreæ.—A dwarf, branching shrub, about 3 feet high. *Branches* spreading, filiform, thickly clothed with appressed, scaly bristles. *Leaves*, lanceolate, mucronulate, stalked, attenuated towards the base, an inch and a half or two inches long, and half an inch in width, dark green above, paler beneath, sparingly clothed on both sides with recumbent, bristly hairs. *Petioles* about a nail long, channelled above, thickly beset with appressed, scaly bristles. *Flowers* terminal in pairs. *Bractes* squamiform, ovate-lanceolate, acuminate, concave, bristly, brown, and scariose, caducous. *Peduncles* scarcely half an inch long, thickly clothed, as well as the calyx, with appressed, silvery, scaly bristles. *Calyx* 5-partite, the segments lanceolate, acute, equal, leafy, green. *Corolla* widely campanulate, of a rich reddish purple; tube very short, turbinate; limb spreading, deeply 5-lobed; lobes oblong, rounded, entire, wavy at the margins; the 2 upper ones marked with deeper colored spots. *Stamens* 5 or 8, unequal, declinate. *Filaments* purple, compressed, slender, bearded below. *Anthers* very short, dark-purple, opening by two terminal pores, and apparently without pollen. *Ovarium* ovate, copiously bristly. *Style* slender, 5-angular, glabrous, purple, declinate, thickened above. *Stigma* large, capitate, projecting beyond the corolla, slightly 2-lobed.

We are indebted to Mr Stidolph, Gardener to Mr Baily, at Peckham Rye, for an opportunity of presenting our readers with a figure of this very showy variety, which he informs us was raised by Mr Wood, gardener to Mrs May, at Sydenham, from a plant of *Rhododendron phœniceum*, that had been fecundated by *R. catawbiense*. It is as Mr Stidolph justly observes, a splendid variety. From the circumstance of its producing its blossoms freely and in abundance, and from their size and color, the plant will prove a valuable addition to the ornaments of the conservatory, during the early spring months.

It will require the same treatment as the other kinds related to *R. indicum*, and it may be increased by cuttings or by layers.

Œnothera bifrons. (*Heart-leaved Œnothera.*) Linnean Class and Order, Octandria Monogynia. Natural Order, Onigrariæ. Trib. 3. Onagreæ.—*Root* biennial. *Stem* 2 feet high, cylindrical, sparingly furnished with spreading white hairs. *Leaves*, the lower ones oblong, upper ones amplexicaul, cordate, acute, finely toothed, pubescent, an inch long. *Calyx* sparingly furnished with spreading bristly hairs; tube nearly equal throughout, filiform, an inch and a half long; limb shorter than the tube, the segments linear-lanceolate, mucronate, reflexed, membranous, pale yellowish-green, occasionally stained with purple, and often combined in pairs. *Petals* obovate, obtuse, sulphur colored, slightly crumpled and crenulate at the upper margin, about the length of the calyx. *Stamens* nearly as long as the petals. *Filaments* nearly equal, slender, filiform, glabrous, four times longer than the anthers. *Pollen* large, triangular. *Ovarium* cylindrical, with four depressed, bristly angles. *Style* filiform, glabrous. *Stigma* annulate, with four cylindrical, blunt, radiating lobes.

This which we believe to be an entirely new species was raised by Mr Miller, from seeds collected in Texas by the late Mr Drummond. Our specimens were communicated from the Bristol Nursery in September last. The plant is biennial, and is of easy culture, growing and ripening its seeds freely in the open border.

The species comes near to *biennis*, but its cordate leaves, crumpled petals, and hispid fruit readily distinguish it.

Schizopetalon Walkeri. (*Walker's Schizopetalon.*) Linnean Class and Order, Tetradynamia Siliquosa. Natural Order, Cruciferæ.—*Root* fibrous, annual. *Stem* cylindrical decumbent, branched, about a foot high, sparingly clothed, like the rest of the plant, with short forked hairs. *Branches* filiform, fragile. *Leaves* linear, obtuse, slightly hoary, sinuately toothed, or pinnatified, with blunt teeth, an inch or two in length, attenuated at the base. *Flowers* terminal, racemose, white, fragrant. *Bractes* linear, entire, recurved. *Pedicels* shorter than the bractes, canescent. *Sepals* oblong, green, canescent. *Petals* 4, white, with narrow, linear channelled claws; lamina as long as the claws, pinnatified with linear, blunt segments. *Stamens* 6, about equal. *Filaments* white, filiform, simple, glabrous. *Anthers* linear, obtuse, incumbent, yellow, nearly half as long as the filament; cells parallel, free at the base. *Ova-*

rium cylindrical, densely pubescent. *Stigma* large, capitate, sessile. *Disk* annular, with four green pointed teeth.

This remarkable plant is a native of Chile, whence it was originally introduced by the late Mr Walker, in 1821, as recorded in the Botanical Magazine. It is a hardy annual, thriving best in a light sandy soil, and is increased by seeds, which it however perfects but sparingly, and that only in dry and warm summers. To hasten their growth, and thereby insure the maturing of seeds, the young plants should be raised in a frame, and planted out in a sunny border about the middle of May.

The flowers are very fragrant, especially in the evening; their odor resembling that of the *Mathiola tristis.*

The curious characters of the divided petals and cotyledons, separate the genus from the rest of the *Cruciferæ*, of whom it constitutes a singularly interesting group.

The generic name alludes to the divided petals, and is compounded of *schizo* to cut, and *petalon* a petal.

Sisyrinchium grandiflorum. (*Large flowered Sisyrinchium*). Linnean Class and Order, Monadelphia Triandria. Natural Order, Irideæ. The whole herbage of a dull glaucous green.—*Rhizoma* short, truncate, throwing out numerous white fibres. *Scapes* a span high, cylindrical, hollow, deeply furrowed, and somewhat spirally convolute, furnished at the base with a few imperfectly developed leaves. *Leaves* cylindrical, hollow, furrowed and rather acute, the length of the scapes. *Spathes* diphyllous, many-flowered, an inch and a half long; leaves unequal, linear-lanceolate, obtuse, cucullate, folded, with the edges smooth, white, and scariose; partial ones inclosed, scariosely membranous. *Peduncles* slender, capillary, glabrous, shorter than the spathes. *Perianthium* deeply 6-partite, spreading, of a rich purple, the segments obcordate, nearly an inch long, marked with five conspicuous, deeper-colored nerves. *Stamens* 3, monadelphous, shorter than, and opposite the three outer segments of the perianthium. *Filaments* glabrous, purple, connate below, upper half free and white. *Anthers* linear-oblong, obtuse, emarginate, incumbent, orange, extorse, finally becoming spirally twisted, composed of two, parallel, prominent cells, connected by a linear, white connectivum, free as the base. *Ovarium* turbinately 3-sided, 3-locular, each cell having many ovules. *Style* slender, glabrous, purple, about as long as the perianthium. *Stigmas* 3, short, simple, recurved, truncate, and minutely papillose at the apex.

This interesting addition to our hardy border flowers, formed part of the rich harvest of vegetable treasures obtained by the late Mr Douglas during his first visit to the North-west regions of the American continent, the plant having been discovered by him near the great falls of the Columbia river.

It far surpasses all the other species of the genus, in the size and rich coloring of its flowers. The plant is perennial, and is readily multiplied by division or by seeds. The soil best suited to it will be found to be a mixture of peat and loam.

The generic name was used by Theophrastus, to designate a plant of the same natural family, supposed by Sibthorp, and other eminent authorities, to have been identical with the *Iris Sisyrinchium* of modern authors. The name originated from the circumstance of pigs being fond of the roots of the plant, and is compounded of *sus* a pig, and *runchos* a snout.

Siphocampylus bicolor—(*Two-colored Siphocampilus.*) Linnean Class and Order, Pentandria Monogynia. Natural Order, Lobeliaceæ. *Plant* perennial, suffruticose. *Stems* erect, rather feeble, branched, about 3 feet high. *Branches* slightly angular, finely pubescent, especially towards the apex. *Leaves* distantly alternate, petiolate, lanceolate, acuminate, even and membranous, finely and unequally serrated, with pointed teeth, attenuated at the base, 3 inches long, bright green above, rather paler and glabrous beneath, the younger ones slightly pubescent, especially on their upper surface. *Petioles* very short, being scarcely more than two lines long, semicylindrical, channelled above. *Flowers* axillary, solitary, pedunculate. *Peduncles* slender, filiform, pubescent, shorter than the leaves, and furnished about the middle with two small, alternate, lanceolate, acuminate, appressed, ciliated bracteolæ. *Calyx* the tube hemispherical, pubescent, green; teeth 5, short, lanceolate, acute, ciliated, erect, equal, the edges slightly recurved. *Corolla* more than an inch long, slightly recurved; tube cylindrical, scarlet, entire, but ultimately splitting along the upper side; limb bilabiate, yellow, of five, linear-lanceolate, acute, nearly equal segments. *Stamens* 5, monadelphous. *Filaments* cohering, membranous, yellow, pubescent, especially at the margins. *Anthers* cohering into a tube, paler yellow, composed of two parallel cells, united by a linear connectivum, each terminated by a tuft of white straight hairs.

We are indebted to Messrs Low and Co. for the opportunity of

giving a figure of this very showy species of *Siphocampylus*, which they raised from seeds collected in Georgia, United States, by Mr Alexander Gordon, a zealous botanical collector, to whom our gardens are already indebted for the introduction of the elegant *Gardoquia Hookeri*.

Mr John Henchman informs us that the present species is perfectly hardy, growing vigorously and producing abundance of its beautiful scarlet and yellow flowers in the open air; the plant will no doubt be very readily multiplied by cuttings.

The present group is a very natural one, and was established, as a distinct genus by Pohl in his *Icones Plantarum Braziliensium*. The species now before us is the most northerly in its geographical range, the greater part of the genus, which includes 42 species, being mostly confined to tropical America.

The name alludes to the curved tube of the corolla, and is compounded of *siphon*, a tube, and *kampulos*, curved.

Spartium junceum ; var. odoratissimum—(*Fragrant Broom.*) Linnean Class and Order, Diadelphia Decandria. Natural Order, Leguminosæ. A spreading, branching shrub, of 3 or 4 feet high, with long, filiform, rush-like, green branches; the younger ones silky. *Leaves* sparingly scattered, stalked, lanceolate, acute, even, an inch long, silky beneath. *Racemes* terminal, solitary, short, many-flowered. *Flowers* of a pure yellow, very fragrant, and rather smaller than those of var. *a*. *Calyx* tubular, spathaceous, striated, glabrous, with an oblique scariose limb, furnished beneath with five short, rather blunt teeth. *Corolla* glabrous, thrice longer than the calyx. *Vexillum* ovate, acuminate. *Wings* oblong, acute, shorter than the keel, connivent, with an oblong callosity on the upper side at the base. *Keel*, the petals slightly cohering, lanceolate, acuminate, rather falcate, furnished near the base with a hollow pit, and rounded at the upper side, the lower edge downy. *Stamens* 10, monadelphous. *Filaments* glabrous, greenish white. *Anthers* pale brown, linear, of two parallel cells, bearded at the base. *Ovarium* compressed, silky. *Style* nearly cylindrical, pale green, glabrous. *Stigma* oblong, unilateral.

This variety is distinguished by its more slender and spreading habit, more silky leaves and shoots, and lastly, by its smaller and more fragrant flowers. The plant was, we believe, first raised by

the Rev. Mr Duke of Lake House, near Salisbury, from seeds stated to have come from Persia.

It is equally hardy with the common variety, and the flowers are still more fragrant.

The generic name is is derived from the Greek *sparton*, which signifies cordage, and alludes to the use to which the ancients applied their Spartium.

Verbena Tweedieana; (*Mr Tweedie's Vervain.*) Linnean Class and Order, Didynamia Angiospermia. Natural Order, Verbenaceæ. Verbena. *Stems* erect, suffruticose, from a span to a foot high, copiously clothed, like the rest of the plant, with soft glandular pubescence. *Leaves* opposite, stalked, ovate-lanceolate, acuminate, soft and membranous, deeply and unequally serrated, two inches long, the base cuneate and entire. *Flowers* in a short capitate spike. *Peduncle* three or four inches long. *Bractes* solitary, ovate-lanceolate, acuminate, entire, about half as long as the calyx. *Calyx* tubular, 5-angular, teeth erect, subulate. *Corolla* salver-shaped; tube cylindrical, pale yellow, glandular, bearded within, twice longer than the calyx; limb spreading, 5-partite, of a rich crimson; segments cuneate, deeply notched, the anterior one rather larger. *Stamens* four, inserted in the mouth of the tube, pale yellow. *Ovarium* glabrous. *Style* inclosed, glabrous, dilated, and compressed laterally at the apex, the sides prolonged into two unequal teeth between which is seated the gland-like stigma.

This lovely species of *Verbena* is nearly related to *V. chamædrifolia*, and is chiefly distinguished by its taller and upright stems, softer leaves, shorter capitate spikes, and larger flowers of a rich crimson. It promises to be quite as hardy as that species, and will prove an equally brilliant ornament to the flower border.

Raised from seeds collected at Laguna de la Molina in the Banda Oriental by Mr Tweedie. The plant grows likewise in the province of Rio Grande do Sul, where it appears to have been originally discovered by the late Mr Sello, in whose collections we have seen native specimens. It was found by Mr Tweedie growing in boggy places, the knowledge of which fact will materially assist in its culture.

Thunbergia alata, var. alba; (White-flowered, winged-petioled Thunbergia.) Linnean Class and Order, Didynamia Angiospermia. Natural Order, Acanthaceæ. Thunbergia. *Stems* herba-

ceous, twining, quadrangular, copiously clothed, like the rest of the plant, with short, soft, spreading hairs. *Leaves* cordate-sagittate, 5-nerved, membranous, downy beneath, two or three inches long, the margin repandly toothed, or more rarely entire. *Petioles* an inch or two inches long, linear, winged, with a leafy slightly wavy border. *Peduncles* axillary, solitary, one-flowered, nearly filiform, scarcely longer than the petioles. *Bractes* two, ovate, mucronulate 9-nerved, entire, winged at the base behind. *Calyx* very short, cup-shaped, green, with twelve subulate, erect, unequal teeth. *Corolla* funnel-shaped; tube curved, dilated upward, and together with the faux of a dark purple, approaching to black, and clothed within with papillose pubescence; limb oblique, pure white, divided into five, rounded-cuneiform, entire, nearly equal lobes. *Stamens* four, didynamous, inclosed. *Filaments* subulate, nearly glabrous, pale purple. *Anthers* pale yellow, bilocular, fringed with white papillose hairs, the cells spurred at the base. *Ovarium* bilocular, surrounded at the base by a yellow, fleshy, lobed ring. *Style* slender, filiform, glabrous, white. *Stigma* bilabiate, the lobes truncate, cucullate, the anterior one declinate.

This very showy variety is generally supposed to be a hybrid production between *T. alata* and *fragrans*, but there is no ground for this supposition, nor can there be any question that the plant is anything more than a mere variety of *T. alata*, differing in no respect except color. The plant is highly ornamental, and being easily multiplied by cuttings, it has already become common. Like the other variety it is often treated as a stove plant, but it succeeds better in the conservatory or greenhouse, and if planted in a warm sunny border, it will grow and blossom freely during the summer months. A soil composed of peat and loam is that which suits it best.

The genus was dedicated by the younger Linnæus to his friend and successor Thunberg, an indefatigable botanical traveller, and author of the *Flora Japonica*, and a variety of other works on botany and zoology.—*British Flower Garden.*

Art. VIII.—*Plums.*

The common wild Plum, furnishes the best of stocks, for the propagation of the choice varieties. It is hardy and free from most diseases. As its growth is slow, it somewhat dwarfs the grafts of the finer kinds, that are naturally more luxuriant. This tends not only to render them more fruitful, but to prevent the fruit from rotting before it comes to full maturity.

The grafts will, in a few years, out-grow the stocks, but the wood of the latter is so tough, that I have never known them to break off, after the wound from the operation of engrafting, was entirely healed. Every neighborhood at the West, abounds with the wild plum. The thriftiest trees, from an inch to an inch and a half in diameter, should be selected and transplanted in autumn to the places where it is intended they shall remain. Care should be taken to preserve every root if possible; the tops should be thinned out, but no large limbs should be amputated. The hole to receive the roots should be at least three feet in diameter, and eighteen inches deep; this should be filled with the richest earth, but *not with manure*. They require a rich soil, and it is best to cover the surface for a few feet around the tree, with compost, tanners' pates, lime and bark, horn-tips, bones, coal-ashes, or any other articles that will keep the ground loose, moist and rich.

When the trees have entirely recovered from the shock of transplanting, engraft them, and not before. It will require at least two years for them to get over it.

In performing the operation of engrafting, saw off the main stock or the leading branches, as the size of the tree may require; where they are not over an inch or an inch and a half in diameter, pare off the surface off the stock with a sharp knife, split it down two inches through the center with a thin butcher knife or other convenient instrument, and then keep open the split by driving in a polished iron wedge, which every farmer should keep for the purpose. A shoulder should then be cut on each side of the graft, two inches from the lower end; and from these shoulders, it should be gradually sloped off by a clean cut, so as to form a wedge that will exactly fit the cleft, in the stock. Next insert the graft into the stock so that the inner barks of the two will be parallel to each other. In

this manner, a great extent of surface comes in contact between them, not only on the whole length of the wedge, but between the shoulders of the graft and the top of the stock; and the graft is at once supplied with a full flow of sap. This is not the case with those set by the transient engrafters that infest our country every spring, who insert their grafts obliquely to the stocks, and leave them to half starve, if we may use the expression, for the want of support. In one instance, the grafts will grow from three to six feet; in the other, not as many inches.

The next process is to protect them from the air and weather. This is best done by carefully surrounding the top of the stocks with grafting cement (resin 73 parts, beeswax 17, and tallow 10,) warmed to the right consistency. Over this place a thick coat of well worked clay, and confine the whole by surrounding it with some pliable cloth and tying it on with pack-thread; the cloth should be about eight inches square, and should be perforated with two small holes near its centre, at a suitable distance apart, for the grafts to pass through when it is placed over the top of the stock. Two grafts should always be inserted—if both live, one can be shortened from time to time, so as to finally give the nourishment to one. In this method the wound heals better than if only one is inserted.

If cement alone be used, it will often destroy the grafts in our hot summers at the west. Clay without cement does not sufficiently exclude the air and wet; combined they act to the best advantage. When tow is employed in place of cloth, birds are apt to strip it off, for furnishing their nests. This, however, can be remedied by coating it over with thin mud.

Plum trees should, if possible, be set where swine can have free access to them. The curculio insect that stings the fruit will be in a great measure exterminated on a country farm, if swine can have an opportunity to eat up the premature droppings. When this cannot be done, the method of shaking the tree, with sheets placed under it at the time the insects are performing the operation, will succeed, as I have tested fully, for a number of years.

Old and exhausted varieties are not worth cultivating. Much care should be used to select those that are young, healthy and fruitful.—*Ohio Farmer.*

Art. IX.—*Blight in Pear Trees.*

Several competitors have already appeared for the five hundred dollars Philadelphia premium, for a preventive in the blight in the pear tree. Two of the communications have appeared in the Farmer's Cabinet; one from N. H. Watkins, of Prince Edward, Va, and the other from T. Emory, of Poplar Grove, Md.

Mr Watkins, ascribes the blight to plethory, or too great a flow of sap, caused by pruning and ploughing; and the preventive he suggests, the utility of which he considers he has fully verified, is neither to prune, nor plough among the trees, after they have become well established in growth. He recommends that manure, if the land is poor, and the trees require it, be applied to the surface; and thinks ashes constitute a good dressing.

Mr Emory is of opinion, "that the cause of *blight* and destruction in the pear and apple tree, is almost always what the French term *coup de soliel*, (stroke of the sun;") and to avoid the stroke of the sun, he recommends that the trees be planted in a moist, but not wet soil, so as to be sheltered on the south-west by "tall, dense forest trees, or a *house* or *hill*."

We notice these communications, not because we think that either assigns the true cause of the blight, or recommends an efficient remedy or preventive; but rather to point out their fallacy.

The blight is not confined to the apple and pear, but extends to many species of the natural order of Pomaceæ, as the quince, service, &c. and appears and disappears at intervals of some years; and hence we infer, that it is not caused by a stroke of the sun, nor abundant flow of sap. These causes are continually operating; and if they produce blight in one season, they would produce it any season, and these trees would long since have been extinct among us. Both of these theories are contradicted by the well known laws of vegetable physiology. But we are not left to conjecture upon this subject. It has been satisfactorily shown, that the blight is owing to an insect, which is described and figured in the memoirs of the Massachusetts Agricultural Society. The first appearance of the blight, that we have noticed on record, was in 1780. We hear nothing further of it until about 1802, when we witnessed its effects during that and four or five subsequent years. It appeared

in our grounds again in 1824 to 1828—since which it has scarcely been noticed, though it may have appeared in other sections of the country. During its last visitation, we lost perhaps, a hundred pear trees, some apple trees, and most of our quince bushes. Of the pears, some grew in dry, and some in moist ground; some in ploughed, some in grass ground, and some in lanes where the ground was trod hard. The blight affected all alike. The only remedy that we thought beneficial, was promptly to cut off and burn all the diseased branches, taking care to cut below the discolored bark and cambium.—*Cultivator.*

Art. X.—*Miscellaneous Articles.*

Radiation of Heat.—The present season has afforded some striking illustrations of the manner in which this operation of nature is conducted, and on which early frosts are so much depending. In the frost of the fifth of August, the air was perfectly clear, and though the thermometer did not sink below 38°, ice formed on the water, and vegetation received a severe check. On the night of the third inst. the heavens were covered with thick clouds, yet though the wind as before was directly in the north, and the thermometer in the same situation sunk to 28°, still no ice was formed near the ground, until after daylight, when the clouds passed away leaving the sky clear, and vessels of water standing on the ground were soon covered with ice and remained so through the day, the air cloudless, and the thermometer rising to 37°. In this case, the clouds, it is clear intercepted the radiated heat, and returned so much of it to the earth's surface that the temperature there remained at least ten degrees higher than it was a few feet from that surface, until they passed off and left the radiation free, when the usual result followed, and ice formed at once. During the night the leaves of the cherry and other trees were frozen hard, but tender plants such as clover, peppers, &c. were untouched when close to the earth. This result shows that when frosts are apprehended early in the season, plants, such as cucumbers, melons, &c. may be preserved by spreading over them any substance, no matter how thin, that shall intercept the radiated heat, while it does not actually touch the plants themselves.—*Genesee Farmer.*

THE PATRIARCH OF PUMPKINS.—Not only has the land of the Pilgrims and thanksgiving pies, been thrown an immeasurable distance into the back ground, but even we of the Empire state must "knock under" to her named the "Keystone," in the production of that molasses-making, and pie-engendering esculent, the pumpkin. We have beat her in our wheat-fields, in our productive oats, in our mammoth strawberries, but when has New York produced such a pumpkin as the one described below; we must recollect however that Pennsylvania is the land of "Monsters."

The Horticultural exhibition at Philadelphia on the 20th and 21st of September, must have been a magnificent affair; and the show of fruits, and flowers, and esculents, such as would fully justify the laudatory paragraphs of that city of brotherly love. Among the other beautiful, delicious, and magnificent productions of nature there exhibited, might be seen in its yellow prime the pumpkin thus described by Mr Chandler of the U. S. Gazette. "The fruits were in the northen saloon of the Masonic Hall, on entering which, the first object that arrested our attention was a pumpkin, raised by John Wetherell, Esq. of Chalkey Hall, near Frankford. It weighed two hundred and thirtyeight pounds, and measured eight feet six inches in diameter. Think of that ye who were born north of the Hudson, and talked of nation great *pumpkins* that weighed forty pounds:—think of that ye yankee women that hunt two hours for three pumpkins exactly alike, so as not to spoil the pies. It is well that a garden of such pumpkins (and Mr Wetherell has many nearly as large) is situated in the centre of the nation—at the extremity they would endanger the *Union*—the States would upset."

There were other things well deserving of notice in the splendid saloons of the Hall devoted to the exhibition. Magnificent trees with their spreading branches and sweet singing birds, the trees made of intertwining dahlias and their variegated flowers; a representation of the U. S. Bank with its porticoes and columns from the same material; fruits, the enticing fragrance of which could not lead the nose astray; bunches of grapes, which in size and flavor would not have dishonored the vale of Eshcol; boxes of glass filled with pure and new made honey; flowers of wax that vied with those of nature; and numerous specimens of the more humble, but not less useful, tenants of the culinary department of horticulture. We are always pleased to notice such agricultural and horticultural exhibitions. They are a kind of neutral ground, on which men of

opposing interests, or clashing political views, may meet, and forget the bitterness so prone to be engendered by the every day workings of conflicting opinions, or selfish claims. By learning to love nature, we learn to think better of our fellow-creatures; and the man who loves to listen to those "living preachers," mute and voiceless, the sweet flowers—who sometimes worships,

> "Not in the dome where crumbling arch and column
> Attest the feebleness of mortal hand;
> But in that fane, most catholic and solemn,
> Which God has planned;"—

will find his heart insensibly softened and refined by the purifying and elevating influences of that religion, taught by the Creator himself from the delightful volume of nature.—*Genesee Farmer.*

PRESERVING THE MORUS MULTICAULIS.—In reply to repeated inquiries how to preserve the Morus multicaulis through the winter, when taken up, we give the following methods, which have been practised with success. They may be kept in good order by taking them up soon after the frost has taken off the leaves, and burying them in a hole, something like that used for potatoes—mix the earth intimately with the trees, and use no straw, or the mice may harbor among and destroy them. Some have left the trees in the field, in a heap, covered with earth, where they kept finely. Freezing does not injure them, so long as they are completely covered with earth. Others have kept them in the cellar, in the same manner, or in boxes, mixed with sand, which is the best way to keep cuttings taken off in the fall.—*Silk Culturist.*

ON DESTROYING THE INSECTS WHICH INFEST FRUIT TREES.—It is of the utmost importance to the success and general well being of all fruit trees, that they be kept perfectly clear from all insects, parasites of all sorts, and all extraneous matters. Winter is the best season in which to operate for effecting this object; and, with regard to fruit trees trained against walls, we ought to commence by loosening all of them from the wall, and giving them regular and judicious pruning. After this, begin upon the main stem, even below the surface of the earth, by removing a portion of the soil, and diligently scrape or pare, if the case be such as to require it, every part, even to the extremity of each branch. Afterwards wash the whole of the wall most completely with the following pre-

paration: Take strong lime-water, after it has settled into a perfectly clear state, (so that none of the lime remains, farther than what it holds in solution), and mix in it about a fourth part of strong tobacco liquor; some soft soap, 1 lb. to a gallon; and about 1 lb. of flour of brimstone, or of sulphur vivum, either will answer: if some black pepper, ground very fine, be added, it will be an improvement. This preparation will clear the wall most completely from every kind of insect. After the trees are again dry, have a mixture ready, composed of the above ingredients, but in stronger proportions; and, instead of the lime water, use chamber lye, or the strong drainage of a farm-yard; and, lastly, thicken it to the consistency of good thick paint, with quicklime dissolved in it. Take painter's brushes of different sizes, and coat the trees completely over with the mixture, not leaving a chink or the axil of a bud, without working the mixture well into it. Use the whitest lime you can get for the purpose, that when dry you may readily see where the brush has missed. It is best to coat every part completely over two or three times, and it will kill every thing that is not concealed in the bark. In pear trees, the insects of the last class are our greatest pest. I wish some one would be kind enough to inform us how to get rid of the warty pest, which does not, I believe, commit its greatest ravages in that state. Will Rusticus of Godalming be so kind as to give us the history of this destructive insect? I think we have no enemy so resistless as this; all others fall beneath the above dressing.—*Louisburg Alleghanian.*

Packing Grapes.—The following is the mode of packing grapes which I adopted with success for many years, having to send them nearly three hundred miles. A box having been prepared, a bed of clean wool well separated, was laid in the bottom, on which a layer of grapes was placed, each bunch being separately enveloped in tissue paper. A portion of wool was then introduced between each bunch, and all the interstices filled with it, and then a layer of wool put over the top. For a second layer, a small ledge of wood was fixed at each end of the box at the level wanted, and a thin board made to fit in easily, so as to fall down upon the ledges; in the board there were two finger-holes made with an inch centre bit; and the board, being fixed down upon the ledges with a couple of small brads at each end, driven in half-way. A second layer of

grapes was laid in as above, and so on for a third layer, if wanted. The finger-holes I found very convenient for getting out the board, after drawing the small brads with a pair of pincers. In cases where wool is an object or it may be thought too expensive, moss well dried, cleaned and threshed, will be found a tolerably good substitute; but the superior elasticity of the wool renders it preferable. —*Loudon's Mag.*

Withered Leaves on Trees.—J. D. in the Gardener's Magazine, observes, "It is stated that in Normandy, children go about with lighted torches of rye straw, for the purpose of burning the lichens, mosses, and dead leaves on the apple trees. Without offering an opinion on the merits of any mode for removing the persisting dead leaves, it may be safely remarked, that to remove them is most judicious and desirable. When leaves, which should fall in autumn, remain, though dead, through the winter on fruit and other trees, such dead leaves, on examination, will commonly be found to be but the envelopes of so many clusters of eggs, or pupæ of insects, which the sunshine of spring will excite to life and voracity just at the time that the expanding leaves of the trees have become eligible food for their sustenance."

Fruit Ladder.—The following simple and useful ladder, for gathering fruit has been recommended to us by a correspondent in Maine. It consists of two upright posts, from 7 to 10 feet long, (more or less, at the option of the constructor,) inclining towards each other, about four feet apart at the bottom, and one foot at the top. The rounds of the ladder pass through the posts, and are about a foot apart. They are made somewhat larger in the middle than at the places where they are inserted into the posts, to give greater strength to the machine. A third post is added to these, through which the top round of the ladder passes, permitting the post last mentioned to turn thereon, so that its lower end may be set at a greater or less distance from the other two posts, or rather from a straight line drawn between them. This ladder may be made light and portable, and possesses the advantage of supporting itself without leaning on any other object.

Preserving Potatoes.—A good way of preserving sweet potatoes is when they are dug pack them up in dry sand, being careful

to keep them covered so as not to get wet. In this way they will remain all winter as fresh and as good as when first dug. A highly respectable farmer, the quality of whose potatoes I myself tested last spring and found them of the first cut, assured me that this was the method he had practised for a number of years, and found it perfectly successful.—*Ohio Farmer's Reporter.*

Planting Forest Trees.—The best time for planting acorns, walnuts, as well as peaches, cherries, and other stone fruits, is in the fall of the year, as soon as they are ripe. If they are kept long after becoming thoroughly ripe, they are apt to lose their vegetative principle.

Canker Worm.—A gentleman states, that in Plymouth, Massachusetts, they preserve fruit trees against canker worms, by the following mixture, used as a substitute for tar. White varnish, soft soap and whale oil, one third of each mixed and applied as tar is usually. This mixture is not soon hardened by the weather, and does not injure the trees. Another simple mode of preventing the ascent of the insects, is to wind a band of refuse flax, or swingle tow round the trunk of the tree, and stick on the band burdock or chesnut burrs, so thick that worms cannot pass between them.

Elderberry Syrup.—Take of the juice of Elderberry one quart; boil it to one pint; strain and add two pounds of double refined sugar; again place it over the fire; so soon as it shall have boiled remove it from the fire, and when cold bottle it for use, taking care to have it well covered. With a less quantity of sugar there will be danger of its becoming mouldy. As a gentle purgative, this syrup is an excellent medicine, of very pleasant taste, and is peculiarly serviceable to children who are not easily induced to take common medicine. The dose for an adult is a wine-glass full.

Balm blossoms, steeped in water, color a pretty rose color. This answers very well for the linings of children's bonnets, for ribbons, &c. It fades in the course of one season, but it is very little trouble to re-color with it. It merely requires to be steeped and strained. Perhaps a small piece of alum might serve to set the color, in some degree, in earthen or tin.

RHODODENDRON ARBOREUM.—There is now in the conservatory at Chatsworth a fine plant of the above species, which has upwards of two hundred branches of flowers upon it. It is almost impossible to convey an accurate idea of an object so magnificent as that plant, which is about eighteen feet high, covered with rich scarlet blossoms. The proper management of this species has long been an object of the cultivator's care; it is often found well grown, but rarely, if ever, seen in anything like the perfection of the present object. Most cultivators under-pot it, which is a mistaken notion: indeed it is quite natural to suppose that a plant which attains to the size of an ordinary forest tree should require plenty of pot room before flowers can be produced of a natural and luxuriant size.

The soil should be varied according to the size of the plants. Seedling plants grow best if potted in very sandy peat; as the plant progresses a little loam should from time to time be added, until the plant is about five or six feet high, more loam should be used at each shifting; when the plant attains a large size, equal parts of loam and peat may be used; by strict attention to the above directions, and supplying the plant plentifully with water during the growing season, fine healthy blooming plants will be the result. It is much to be regretted that so fine an object should not be hardy enough to grow in the open air, but from repeated trials, which have failed in various parts of the country, we are fearful this desirable object will never be attained.

Numberless beautiful varieties have been raised, some almost as handsome as the parent itself; most of the crosses have been between this species and Rhododendron Ponticum; these varieties are quite hardy, but they bloom rather early to be seen in high perfection in the open air. Mr Burn, gardener to Lord Aylesbury, has directed his attention with great success to hybridize between *R. arboreum* and *R. maximum*. The consequence is, he has raised a most beautiful variety which flowers later than those raised by *R. ponticum*; in a few years we may expect to see numberless beautiful varieties of this noble species growing in every common garden. A more interesting and delightful occupation cannot be well imagined than that of raising lovely varieties of plants; and when we consider the beauty of evergreen plants at all seasons, it must

give double interest to raise an almost imperishable plant like a Rhododendron.—*Paxton's Mag.*

Culture of Commelina cælestis.—Sow the seed on a moderate hot-bed, with the other annuals, about the middle of February, or earlier; but in the latter case it will be necessary to pot the plants, and keep them under glass until the beginning of May, when they may be turned out in the flower-ground; or it may be sown in the open ground in the beginning of March. The ground should be moderately rich and light, although any ordinary garden mould will answer; cover the seed half an inch deep with light and sandy earth, and, should the weather prove genial, the plants will appear in about a fortnight, and require no further care than to be kept free from weeds, and watered in very dry weather. By the beginning of July the plants will be in blossom; and either in beds, masses, or as solitary plants, add greatly to the beauty of the flower border. Persons possessing the plant may have it in bloom in May, or even earlier, by treating the roots as we do those of the dahlia, viz:—planting them in pots, and plunging the pots in a moderate hot-bed, placing them in decayed leaf-mould under glass; here they will soon vegetate, and may be placed in the open ground as soon as danger from frost is not any longer to be apprehended. By treatment which every gardener understands, such as sowing at different seasons, the plant may be made to flower at any time, or be kept in blossom all the year round. The roots require, in order to preserve them from frost, only the ordinary care of placing a few inches of sand, turf-mould, ashes, or the like, over them as they stand in the bed; or they may be raised and preserved in sand in the manner that carrots are sometimes kept during the winter.—*Ibid.*

The Cow Tree.—One of the most remarkable phenomena of the vegetable world is the cow tree, described by Humboldt in the following terms, as growing in the Cordilleras of South America:—"On the barren flank of a rock grows a tree with dry and leathery-like leaves; its large woody roots can scarcely penetrate into the stony soil. For several months in the year not a single shower moistens its foliage. Its branches appear dead and dried; yet, as soon as the trunk is pierced, there flows from it a sweet and

nourishing milk. It is at sunrise that this vegetable fountain is most abundant. The natives are then to be seen hastening from all quarters, furnished with large bowls to receive the milk, which grows yellow and thickens at the surface. Some empty their bowls under the tree, while others carry home the juice to their children. The milk obtained by incisions made in the trunk is glutinous, tolerably thick, free from all acrimony, and of an agreeable and balmy smell. It was offered to us in the shell of the trituros, or calabash tree. We drank a considerable quantity of it in the evening before we went to bed,and very early in the morning, without experiencing the slightest injurious effect. The viscosity of the milk alone renders it somewhat disagreeable. The negroes and free laborers drink it, dipping into it their maize, or cassava bread." Mr. Lockhart has subsequently afforded the following additional particulars concerning this tree : —" The *Palo de vaca* is a tree of large dimensions. The one that I procured the juice from had a trunk seven feet in diameter, and it was one hundred feet from the root to the first branch. The milk was obtained by making a spiral incision into the bark. The milk is used by the inhabitants wherever it is known. I drank a pint of it without experiencing the least inconvenience. In taste and consistence, it much resembles sweet cream, and possesses an agreeable smell."

Receptacles for Milk.—All the various milky juices reside in the bark and leaves, and are not found in the wood. They are contained in distinct receptacles, and may be extracted by means of incisions chiefly in the upper parts of plants, and which do not extend deeper than the bark ; otherwise, they would be diluted and impoverished by mixing with the ascending sap. M. Berthollet has recorded a remarkable instance of the harmless quality of the sap in the interior of a plant, whose bark is filled with a milky juice of a poisonous nature. He describes the natives of Teneriffe as being in the habit of removing the bark from the *Euphorbia canariensis*, and then sucking the inner portion of the stem in order to quench their thirst, this part containing a considerable quantity of limpid and non-elaborated sap. The reservoirs which contain the milky juice of the wild lettuce (*Lactuca virosa*,) are so remarkably irritable, that the slightest touch is sufficient to cause it to be ejected from them with considerable force. When this plant is about

to flower, if an insect happens to crawl over the surface of the stalk anywhere near its summit, a jet of milk is propelled. In general, plants which secrete these milky juices, love the light; few are found to affect shady situations, and none are aquatics. By cultivation, their noxious properties may be greatly subdued.—*Dr Lardner's Encyclopædia*, BOTANY.

NEW PROCESS FOR WINDING SILK, &c.—Mr Durant at Jersey City, is making extensive experiments in winding silk from worms of his own rearing. He has six different plans for the worm to wind the cocoon. Mr D. has likewise discovered a native silk worm of our forest, whose cocoon is fifty to eighty per cent. heavier than that of the Asiatic. Its silent labors are often encountered in the solitary depths of our forests, on bushes and trees chiefly the elder, but like many other of nature's works prepared to our hand, they have been passed by unheeded. Mr Durant hopes to domesticate this worm, and direct their habits to the purposes of useful industry. One of the great advantages resulting from this would be the very superior quality of the Silk Worm Gut, so much used by the amateur fishermen, and which this worm furnishes 80 per cent. heavier and stronger than those hitherto in use. This glutinous matter is known to be the most tenacious substance of any thing we are acquainted with spun out to the same fineness. In fact, this of Mr Durant's, though not thicker than two horse hairs braided, and therefore scarcely perceptible to the fish, in which deception consists its value, it is enabled to raise a weight of 100 lbs., and consequently with ease raise a powerful shark, for example, of 40 lbs., struggling with all his additional muscular force to escape. To give an idea of the value of this article, we may mention that sagacious fishermen are willing to pay for one selected from the Asiatic worms from 12 1-2 to 25 cents, and there are thousands in the market, of inferior description because they are from a small worm, and which may be purchased for one cent a piece.—*Journal of Commerce.*

A HEALTHY RECREATION.—Among the pleasant employments which seem peculiarly congenial to our sex, the culture of flowers stands conspicuous. The general superintendence of a garden has been repeatedly found favorable to health, by leading to frequent exercise in the open air, and that communion with nature which is

equally refreshing to the heart. It was laboring with her own hands in her garden, that the mother of Washington was found by the youthful Marquis La Fayette when he sought her blessing as he was about to commit himself to the ocean, and return to his native clime. The tending of flowers has ever appeared to me a fitting care for the young and beautiful. They then dwell as it were, among their own emblems, and many a voice of wisdom breathes on the ear from those brief blossoms, to which they apportion the dew and the sunbeam. — *Mrs. Sigourney.*

Directions for Making Currant Wine. — Our Tennessee correspondent, who communicated the following, says — "We are now using some wine, made according to this recipe, and find it decidedly superior to any foreign wine for the table. The imported wines are all too strong." — *Cultivator.*

Gather your currants wheu fully ripe: break them well in a tub; press them through a sifter; then strain them through a flannel bag, and measure the juice. Add two gallons of water to one of juice; put three pounds of New-Orleans sugar; stir it till the sugar is quite dissolved. In straining the juice of the currant, use a hair sieve, and not one of wire; then use a close tow linen bag, and afterwards a flannel one, to pass the juice through. The juice must not be permitted to stand over night. Observe that the cask be sweet and clean, and such as never been used for beer or cider, and if new, let it be well seasoned. Do not fill your cask too full, otherwise it works out at the bung, which is injurious to the wine — rather make a proportionate quantity over and above, that after drawing off some of the wine, you may have enough to fill up the cask. Lay the bung lightly on the hole to prevent flies, &c. from creeping in. In three or four weeks the bung hole may be stopped up leaving only the vent hole open till it has done working, which is generally the middle or last of October. It may then be racked off if you please, but I think it best to leave it on the lees till spring, and if not wanted for present use, it may be left on the lees for two years without damage.

When you draw off the wine, bore a hole an inch at least from the top hole, and a little to one side of it, that it may run off clear of the lees. Some put in spirit, but I do not think it advisable. Do not suffer yourself to be prevailed on to put more than one-third

juice, for that would render the wine hard and unpleasant, nor too much sugar, as that would deprive it of its pure vinous taste. It improves by age.

Destruction of Insects and Vermin.—It has long been known, that the leaves of the Elder when put into the subterraneous paths of moles, will drive them away: when the same in a green state are rubbed over fruit trees and flowering shrubs, or when strewed among corn or garden vegetables, insects will not attach to them. An infusion of these leaves in warm water is good for sprinkling over rose-buds and flowers subject to blight; also to prevent the devastation of the caterpillar.

A Pennsylvanian farmer states, in a late American journal, that the water in which potatoes have been boiled, sprinkled over grain or garden plants completely destroys all insects, in every stage of existence, from the egg to the full grown fly.

Ammoniacal liquor, produced in the manufacture of gas from coal, and to be procured for the trouble of carrying, at any gas work, will eventually destroy the grub and other worms, which so often defeat the hopes of the gardener; more particularly as regards his early crops. So far is this liquid from having the property of injuring even the tenderest plant, that it seems rather to invigorate than otherwise.

A paste of charcoal powder, or soot and train oil, laid on the trunks of trees, in rings or circles, by means of a brush, a few inches from the ground, will form a barrier over which snails or grubs, &c. cannot pass.

Cabbages, &c. may be easily guarded against the depredations of caterpillars, by sowing a belt of hemp seed around the borders of the ground where they are planted; for it is a well known fact, that none of these vermin will approach the place so enclosed.

Destruction by the fly in turnips may be prevented by dividing the seed intended for one day's sowing into two equal parts, and putting one part to steep in a vessel containing soft pond, or ditch water, the night previous to its being used. Next morning mix the whole together, and add to each pound of seed two ounces of flour of sulphur. It has been adopted with success for many years by the intelligent farmers of the south-west of Scotland.

The American farmers effectually prevent the blight or mildew

from injuring their orchards, by rubbing tar well into the bark of the apple trees in the spring season : this is done about four or six inches wide round each tree, and at about a foot from the ground. Abundant crops generally follow this treatment.

The gumming of fruit trees is to be prevented by forming a compost of horse-dung, clay sand, and tar. This applied to the trunk and stems of fruit trees, after being properly cleansed, will prevent that spontaneous exudation, called gumming, which is so injurious to their growth.

The growth of weeds around fruit trees recently transplanted does the latter much injury, and diminishes the fruit both in size and quality. Sonini, in his Bibliotheque Physico Economique, states, that to prevent this the German horticulturists and farmers spread on the ground, around the fresh transplanted trees, as far as their roots are supposed to extend, the refuse stalks of flax, after the fibrous parts have been separated. This treatment gives them surprising vigor, as no weed will grow under flax after the fibrous parts have been thoroughly separated and the earth remains fresh and loose. Old trees treated in the same manner, when languishing in an orchard, will recover and push out vigorous shoots. In place of flax stalks, the leaves which fall from trees in autumn may be substituted ; but these must be covered with waste twigs, or other more weighty materials, to prevent the wind from blowing them away.

Mr Macdonald, of Scalpa, in the Hebrides, having had his corn, &c. considerably injured by mice, and other vermin, put at the bottom, near the centre and at the top of each stack or mow, as it was raised, a handful of the stalks of wild mint, gathered near a brook in a neighboring field : he never afterwards had his grain consumed. He tried the same experiment with his cheese and other articles kept in his dairy, viz. by laying a few leaves green or dry on the articles to be preserved from their attacks, and with equal success.

To prevent hares, rabbits and rats from barking young trees and plantations, take any quantity of tar, and six or seven times as much grease, stirring and mixing them well together; with this composition brush the young trees, as high as hares, &c. can reach. This will so effectually prevent them from being barked, that if an ash plantation were made in a rabbit warren, the same would remain untouched.—*Gardener's Gazette.*

QUINCY MARKET.

[Reported for the Horticultural Register.]

APPLES, Winter,	barrel,	1 75 to	2 25
Good Fall,	bushel,	1 25	1 50
BARBERRIES,	do.	75	1 00
BEETS,	do.	75	
BEANS, White	do.	2 50	2 75
Shell, Saba,	quart	20	
BROCOLI,	head	12½	25
CABBAGES,	dozen	50	75
CAULIFLOWERS,	head	12	25
CARROTS,	bushel	75	
CELERY,	root	6	12
CRANBERRIES,	bushel,	1 50	
GRAPES,	pound	75	
LEMONS,	box	3 00	3 50
NUTS, Almonds, (Soft shelled)	pound	7	8
(Hard)	do.	4	5
Filberts	do.	3 3-4	4
English Walnuts	do.	5	7
Castana,	do.	3	4
Pea Nuts,	bushel	1 25	1 50
ORANGES,	box	3 00	5 00
ONIONS,	bushel	1 00	
POTATOES, barrel, 1 00 a 1 25	do.	50	
PEARS,	peck,	67	75
PEPPERS,	pound	4	
SWEET POTATOES,	bushel	1 50	
SQUASHES, Crookneck,	pound	1 1-2	2
Valparaiso,	pound	3	
TURNIPS,	bushel	75	

Boston, Nov. 2, 1837.